Appl. No. 09/753,530

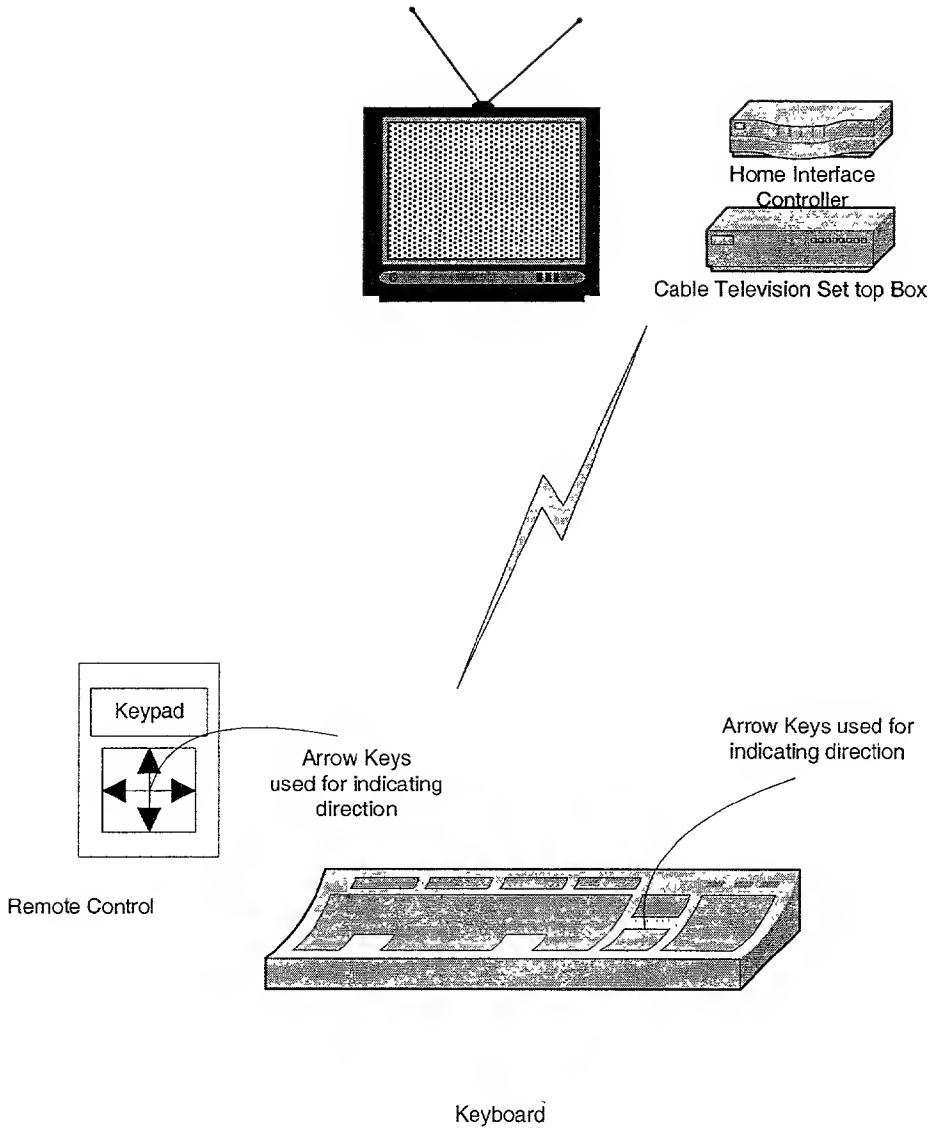


Fig. 1

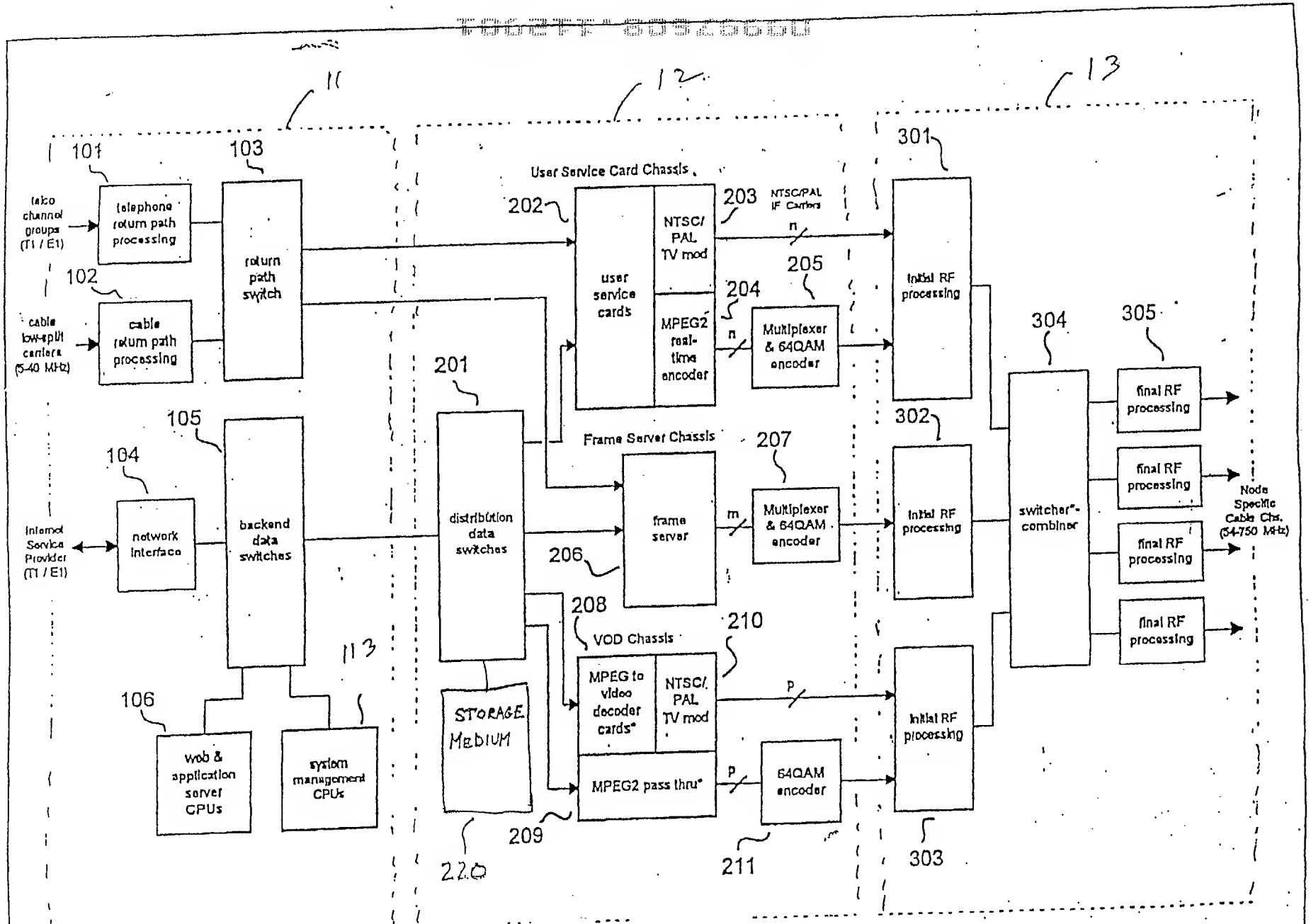

11
12
13
101
103
telco channel groups (T1 / E1)
telephone return path processing
return path switch
102
cable low-split carriers (5-40 MHz)
cable return path processing
User Service Card Chassis
202
user service cards
NTSC/ PAL TV mod
MPEG2 real-time encoder
203
NTSC/PAL IF Carriers
n
204
205
Multiplexer & 64QAM encoder
301
Initial RF processing
304
305
201
105
104
Internet Service Provider (T1 / E1)
network interface
backend data switches
distribution data switches
Frame Server Chassis
frame server
207
m
Multiplexer & 64QAM encoder
206
302
Initial RF processing
switcher*-combiner
final RF processing
final RF processing
final RF processing
final RF processing
Node Specific Cable Chs. (54-750 MHz)
208
VOD Chassis
210
MPEG to video decoder cards*
NTSC/ PAL TV mod
p
113
106
web & application server CPUs
system management CPUs
STORAGE MEDIUM
MPEG2 pass thru*
p
64QAM encoder
Initial RF processing
209
220
211
303

FIG 1A

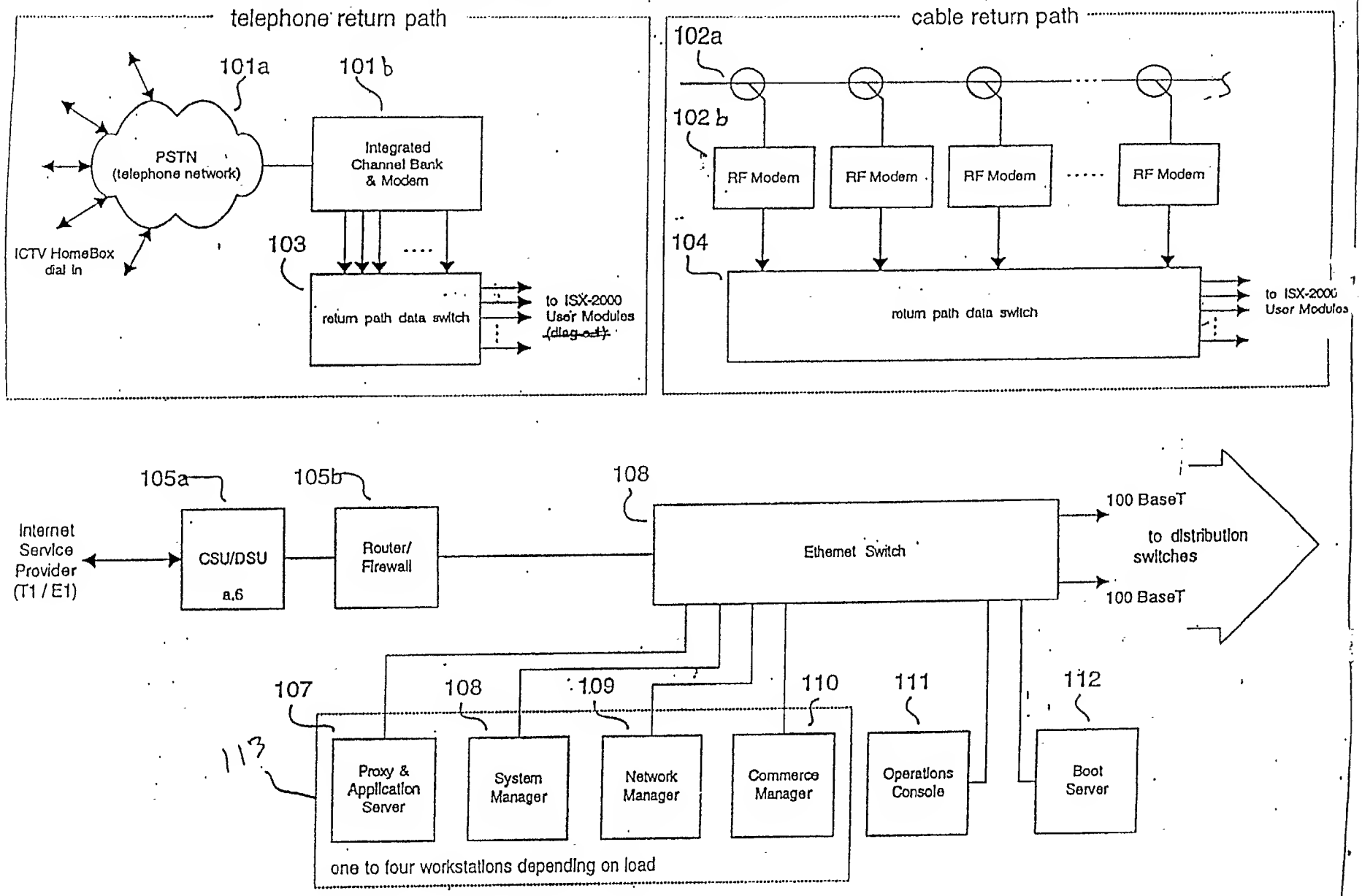

telephone return path
101a
101b
PSTN
(telephone network)
Integrated
Channel Bank
& Modem
ICTV HomeBox
dial in
103
return path data switch
to ISX-2000
User Modules
cable return path
102a
102b
RF Modem
RF Modem
RF Modem
RF Modem
104
return path data switch
to ISX-2000
User Modules
105a
105b
108
Internet
Service
Provider
(T1 / E1)
CSU/DSU
a.6
Router/
Firewall
Ethernet Switch
100 BaseT
to distribution
switches
100 BaseT
107
108
109
110
111
112
113
Proxy &
Application
Server
System
Manager
Network
Manager
Commerce
Manager
Operations
Console
Boot
Server
one to four workstations depending on load

FIG. 2

EP 0 852 868 B1

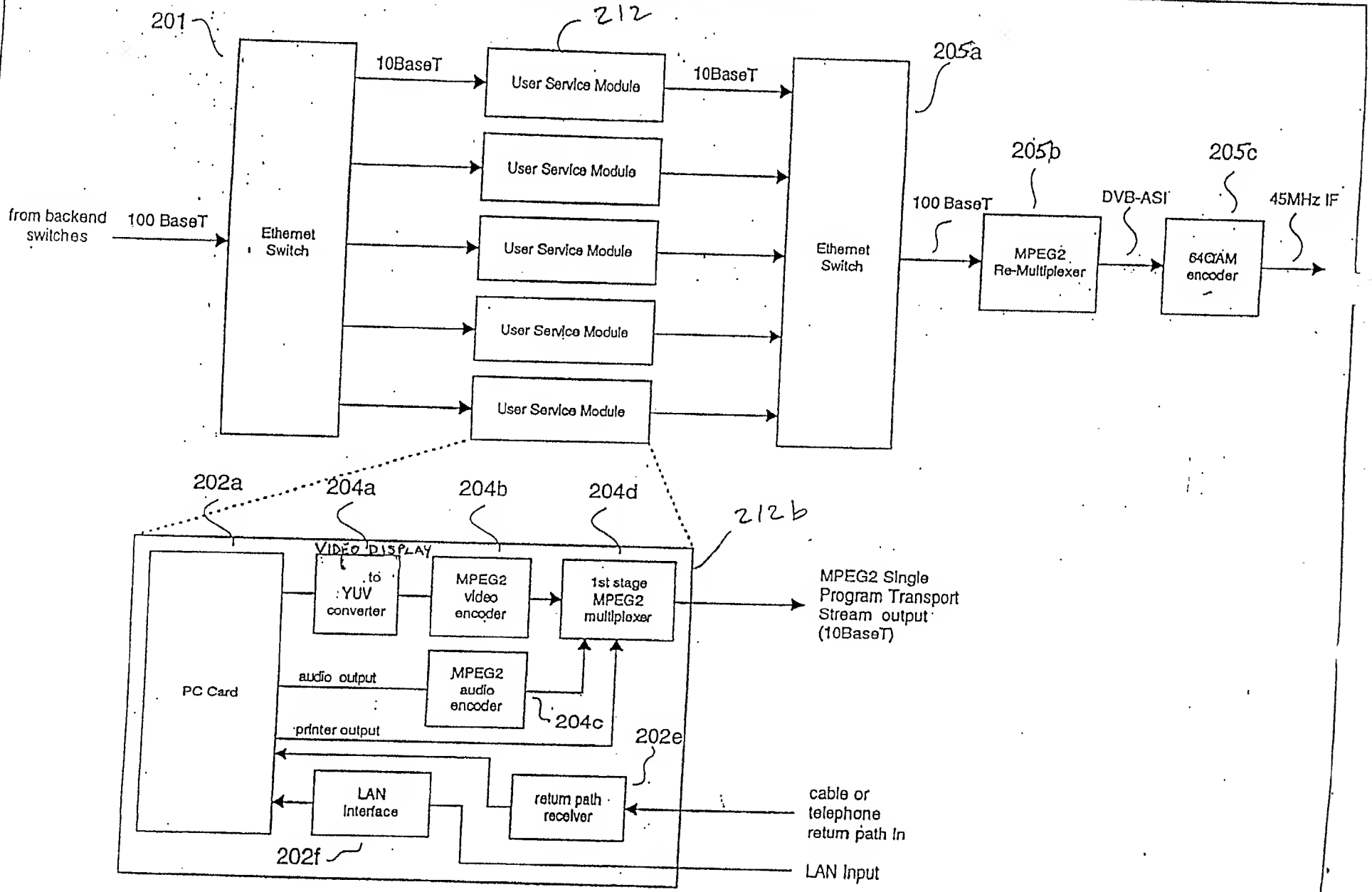


FIG. 3

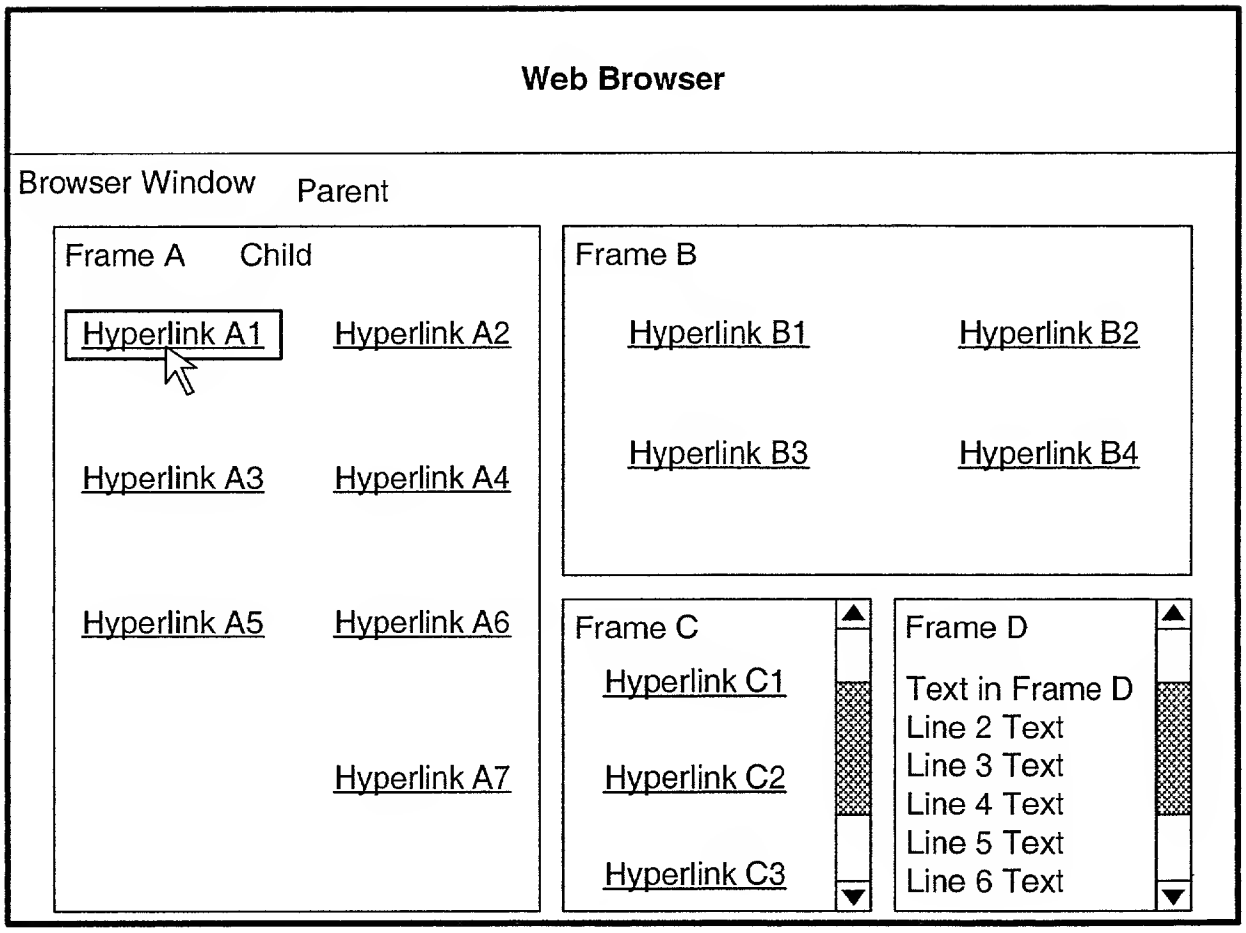

Web Browser
Browser Window
Parent
Frame A
Child
Hyperlink A1
Hyperlink A2
Hyperlink A3
Hyperlink A4
Hyperlink A5
Hyperlink A6
Hyperlink A7
Frame B
Hyperlink B1
Hyperlink B2
Hyperlink B3
Hyperlink B4
Frame C
Hyperlink C1
Hyperlink C2
Hyperlink C3
Frame D
Text in Frame D
Line 2 Text
Line 3 Text
Line 4 Text
Line 5 Text
Line 6 Text

Fig. 4

Fig. 5

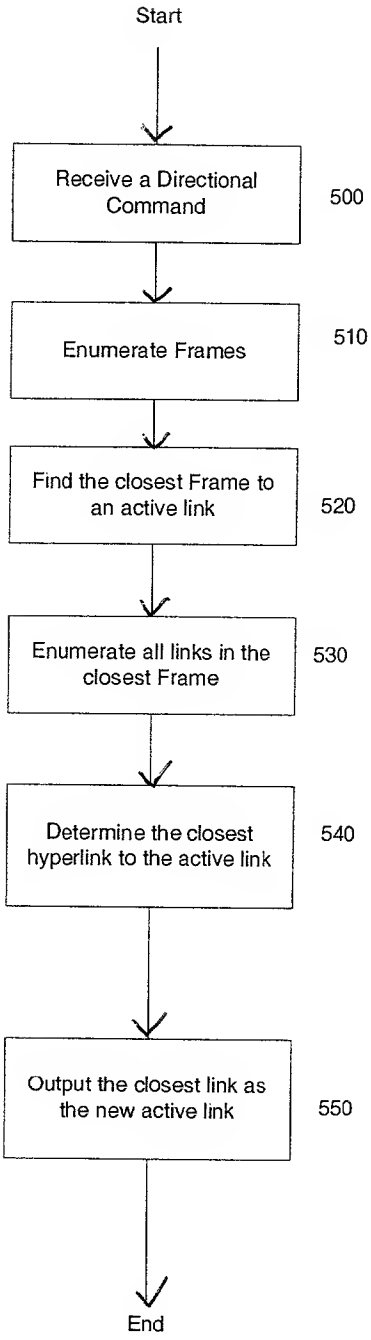
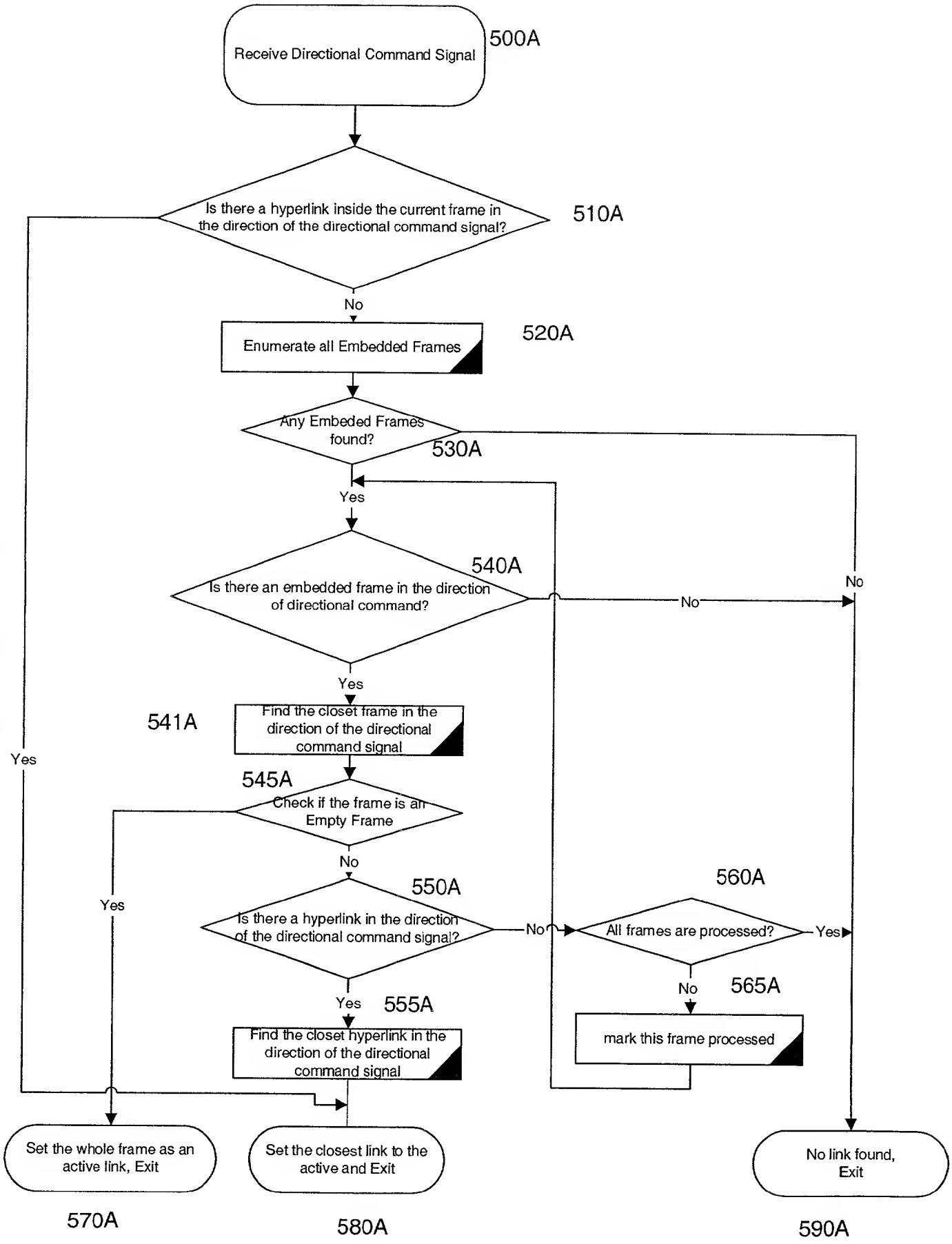

Start
Receive a Directional Command
500
Enumerate Frames
510
Find the closest Frame to an active link
520
Enumerate all links in the closest Frame
530
Determine the closest hyperlink to the active link
540
Output the closest link as the new active link
550
End

Fig. 5A


Receive Directional Command Signal
500A
Is there a hyperlink inside the current frame in the direction of the directional command signal?
510A
No
Enumerate all Embedded Frames
520A
Any Embeded Frames found?
530A
Yes
Is there an embedded frame in the direction of directional command?
540A
No
No
Yes
Find the closet frame in the direction of the directional command signal
541A
Yes
Check if the frame is an Empty Frame
545A
No
Yes
Is there a hyperlink in the direction of the directional command signal?
550A
No
All frames are processed?
560A
Yes
No
565A
Yes
555A
mark this frame processed
Find the closet hyperlink in the direction of the directional command signal
Set the whole frame as an active link, Exit
Set the closest link to the active and Exit
No link found, Exit
570A
580A
590A

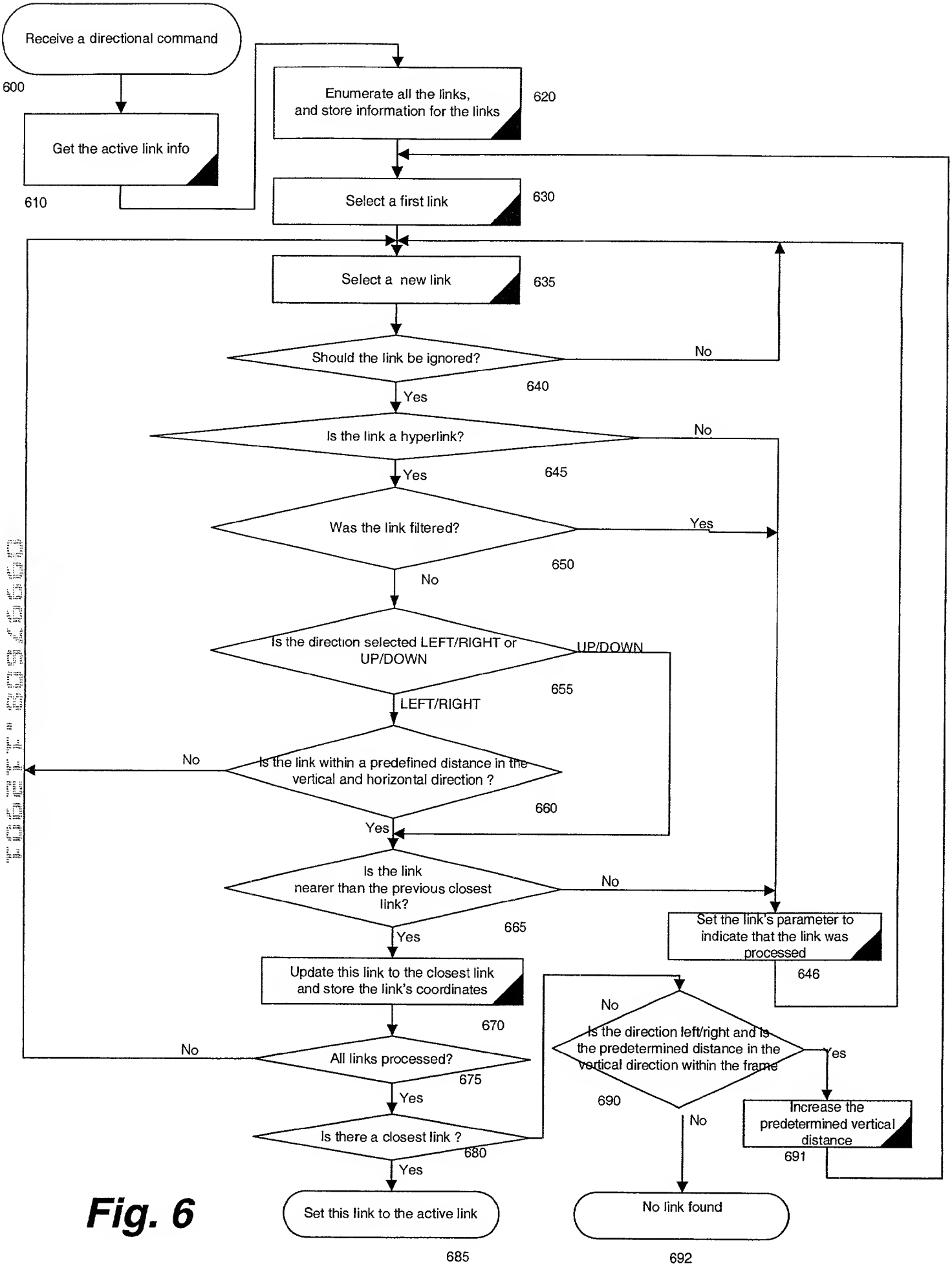

Receive a directional command
600
Get the active link info
610
Enumerate all the links, and store information for the links
620
Select a first link
630
Select a new link
635
Should the link be ignored?
640
No
Yes
Is the link a hyperlink?
645
No
Yes
Was the link filtered?
650
Yes
No
Is the direction selected LEFT/RIGHT or UP/DOWN
655
UP/DOWN
LEFT/RIGHT
Is the link within a predefined distance in the vertical and horizontal direction ?
660
No
Yes
Is the link nearer than the previous closest link?
665
No
Yes
Update this link to the closest link and store the link's coordinates
670
All links processed?
675
No
Yes
Is there a closest link ?
680
Yes
Set this link to the active link
685
Set the link's parameter to indicate that the link was processed
646
Is the direction left/right and is the predetermined distance in the vertical direction within the frame
690
No
Yes
Increase the predetermined vertical distance
691
No link found
692

Fig. 6

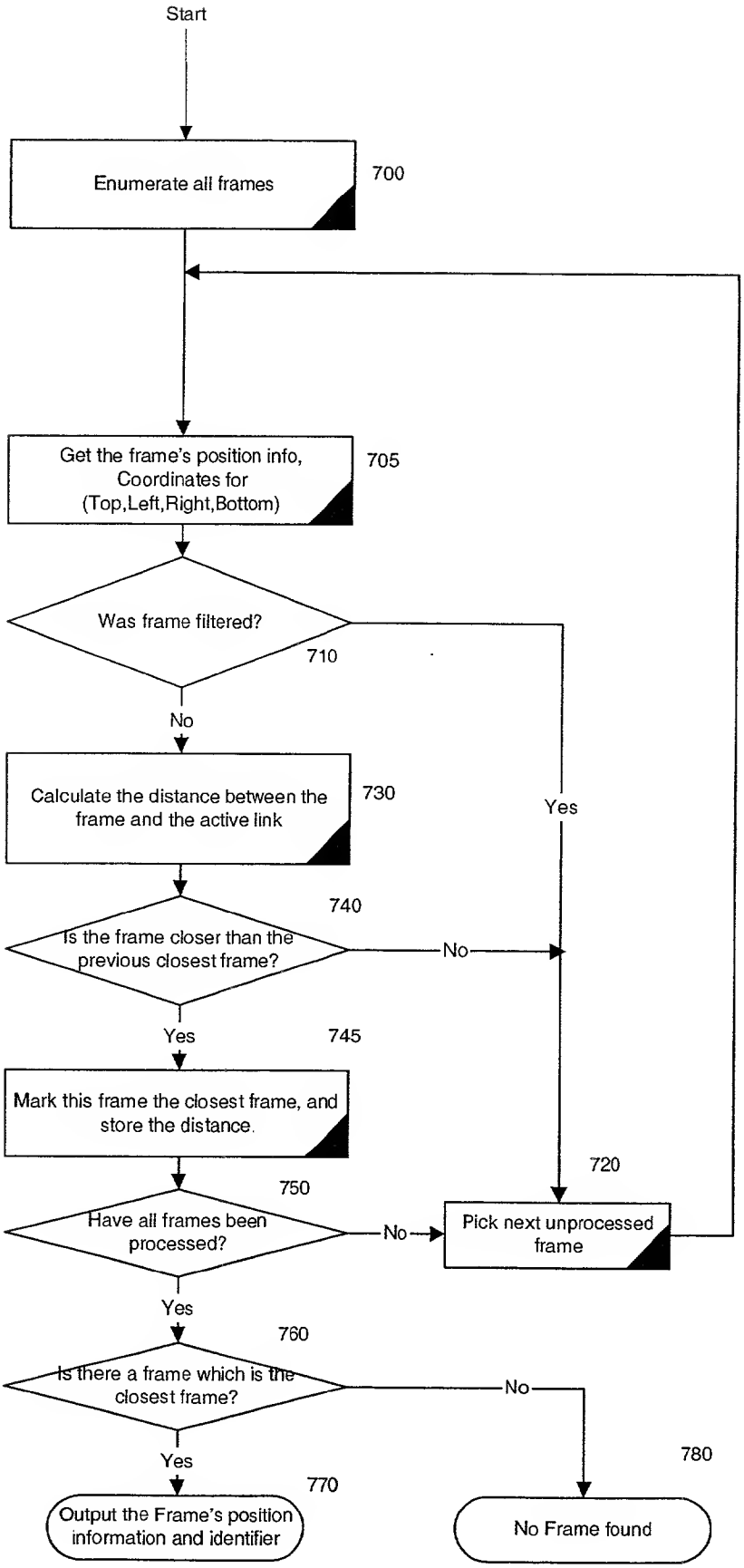

Start
Enumerate all frames
700
Get the frame's position info, Coordinates for (Top,Left,Right,Bottom)
705
Was frame filtered?
710
Yes
No
Calculate the distance between the frame and the active link
730
Is the frame closer than the previous closest frame?
740
No
Yes
745
Mark this frame the closest frame, and store the distance.
720
Have all frames been processed?
750
No
Pick next unprocessed frame
Yes
Is there a frame which is the closest frame?
760
No
Yes
770
780
Output the Frame's position information and identifier
No Frame found

Fig. 7

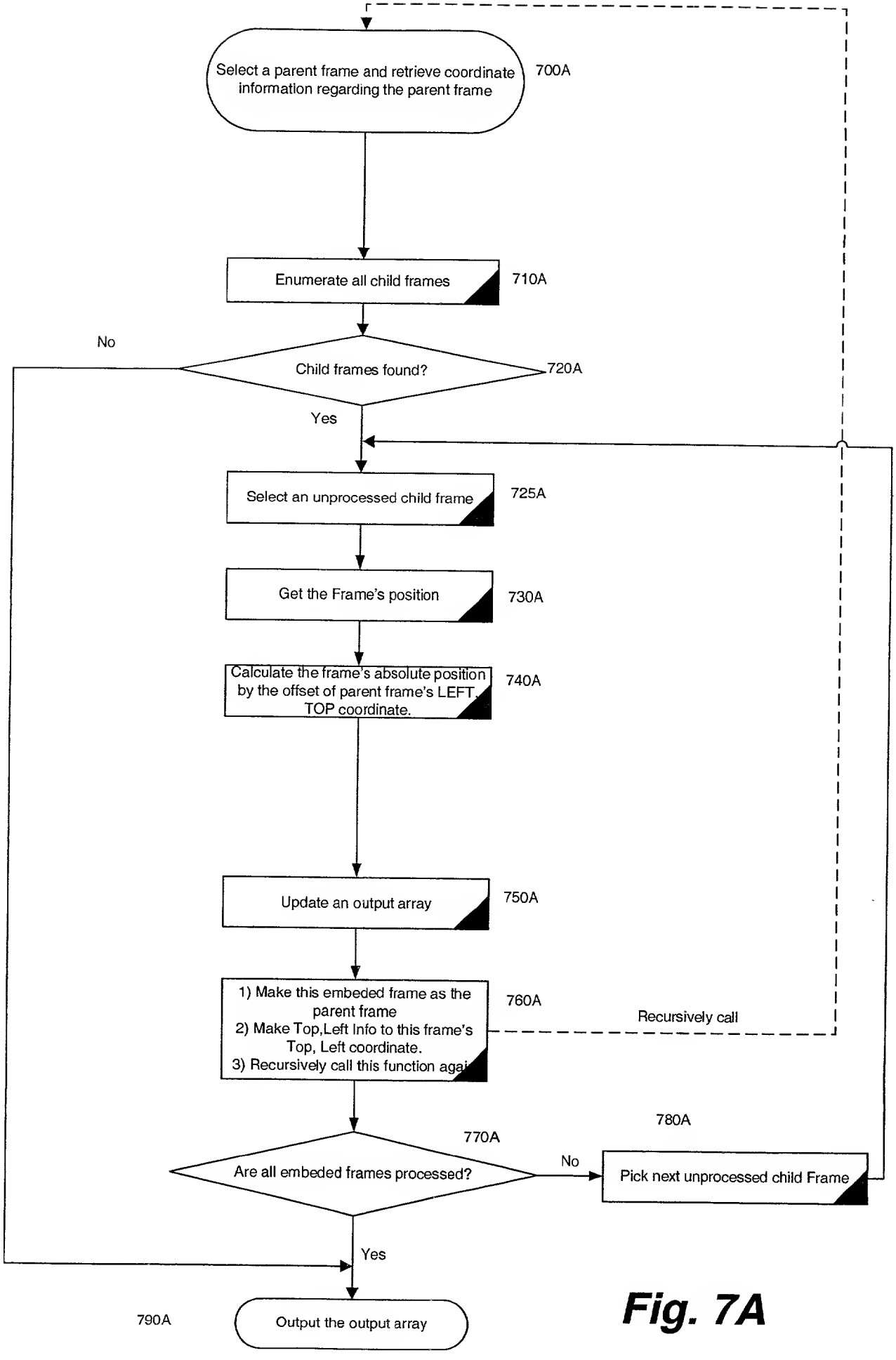

Select a parent frame and retrieve coordinate information regarding the parent frame
700A
Enumerate all child frames
710A
No
Child frames found?
720A
Yes
Select an unprocessed child frame
725A
Get the Frame's position
730A
Calculate the frame's absolute position by the offset of parent frame's LEFT, TOP coordinate.
740A
Update an output array
750A
1) Make this embeded frame as the parent frame
2) Make Top,Left Info to this frame's Top, Left coordinate.
3) Recursively call this function agai
760A
Recursively call
780A
770A
Are all embeded frames processed?
No
Pick next unprocessed child Frame
Yes
790A
Output the output array

Fig. 7A

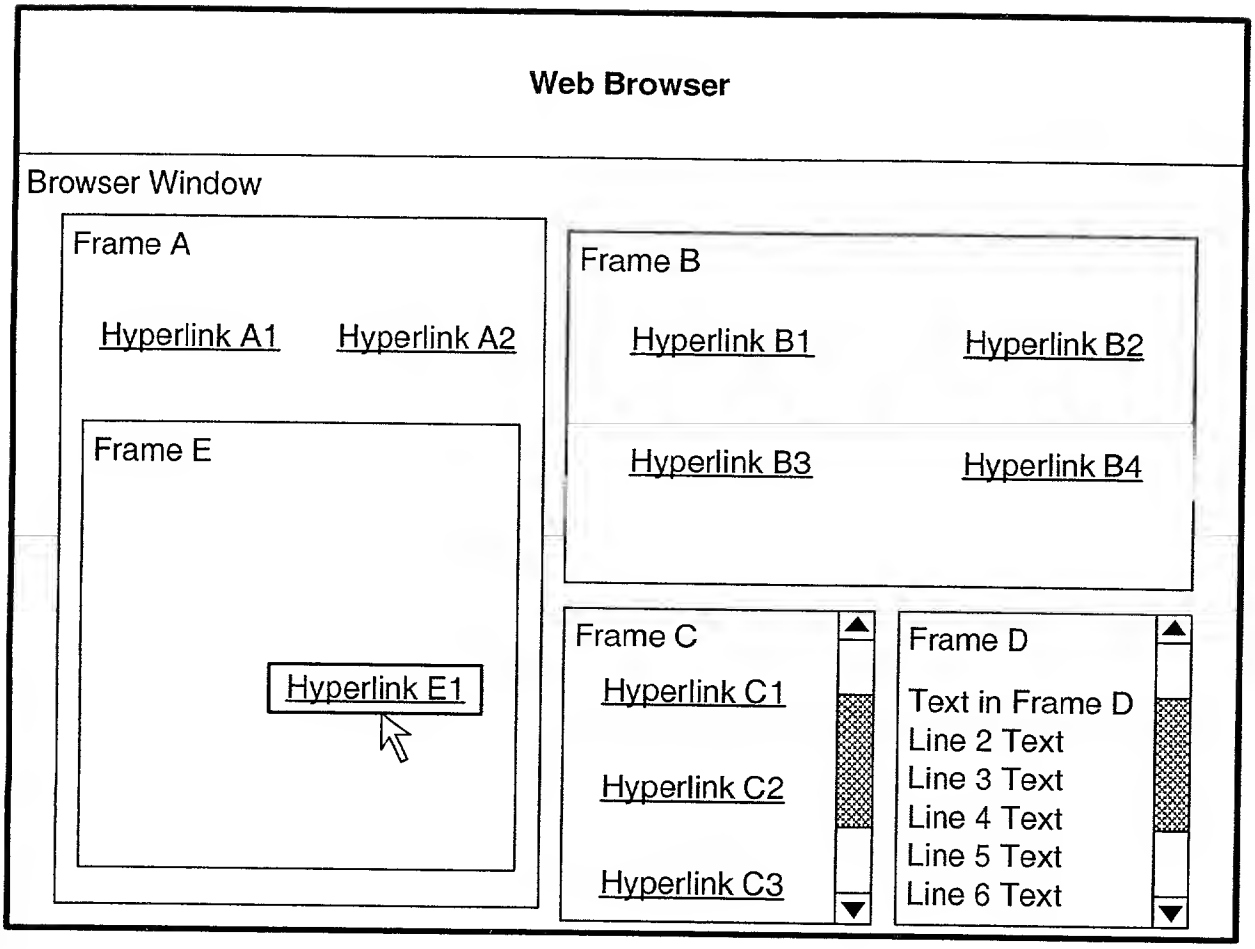

Web Browser
Browser Window
Frame A
Hyperlink A1
Hyperlink A2
Frame E
Hyperlink E1
Frame B
Hyperlink B1
Hyperlink B2
Hyperlink B3
Hyperlink B4
Frame C
Hyperlink C1
Hyperlink C2
Hyperlink C3
Frame D
Text in Frame D
Line 2 Text
Line 3 Text
Line 4 Text
Line 5 Text
Line 6 Text

Fig. 7B

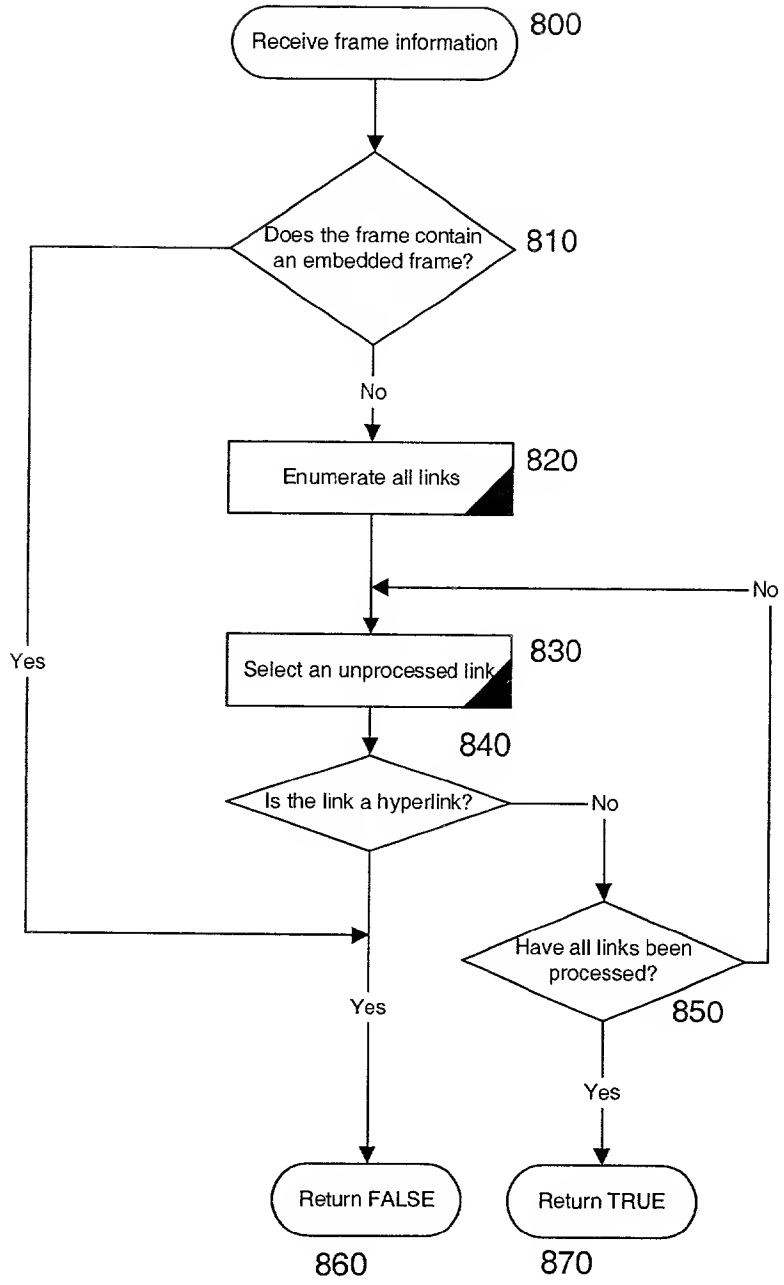

Receive frame information
800
Does the frame contain an embedded frame?
810
No
Yes
Enumerate all links
820
No
Select an unprocessed link
830
840
Is the link a hyperlink?
No
Yes
Have all links been processed?
850
Yes
Return FALSE
860
Return TRUE
870

Fig. 8

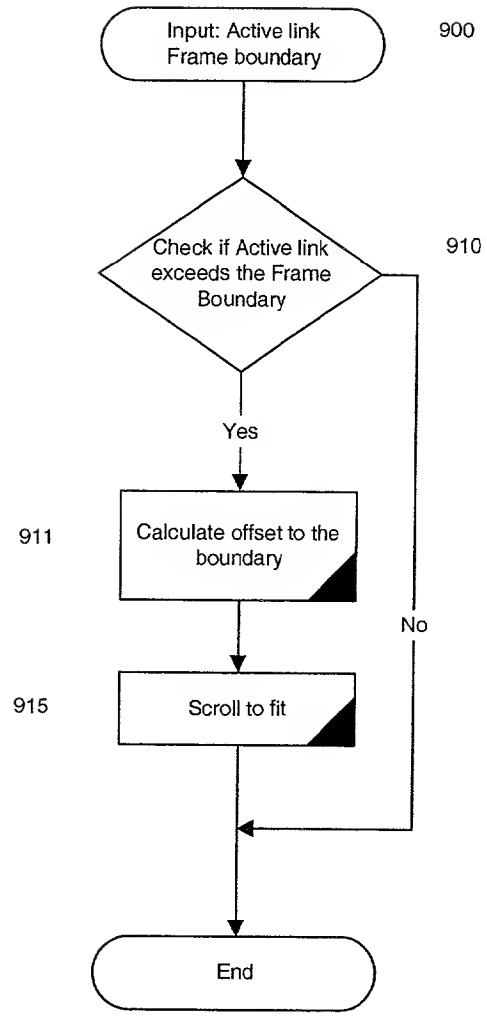

Input: Active link
Frame boundary
900
Check if Active link exceeds the Frame Boundary
910
Yes
No
911
Calculate offset to the boundary
915
Scroll to fit
End

Fig. 9

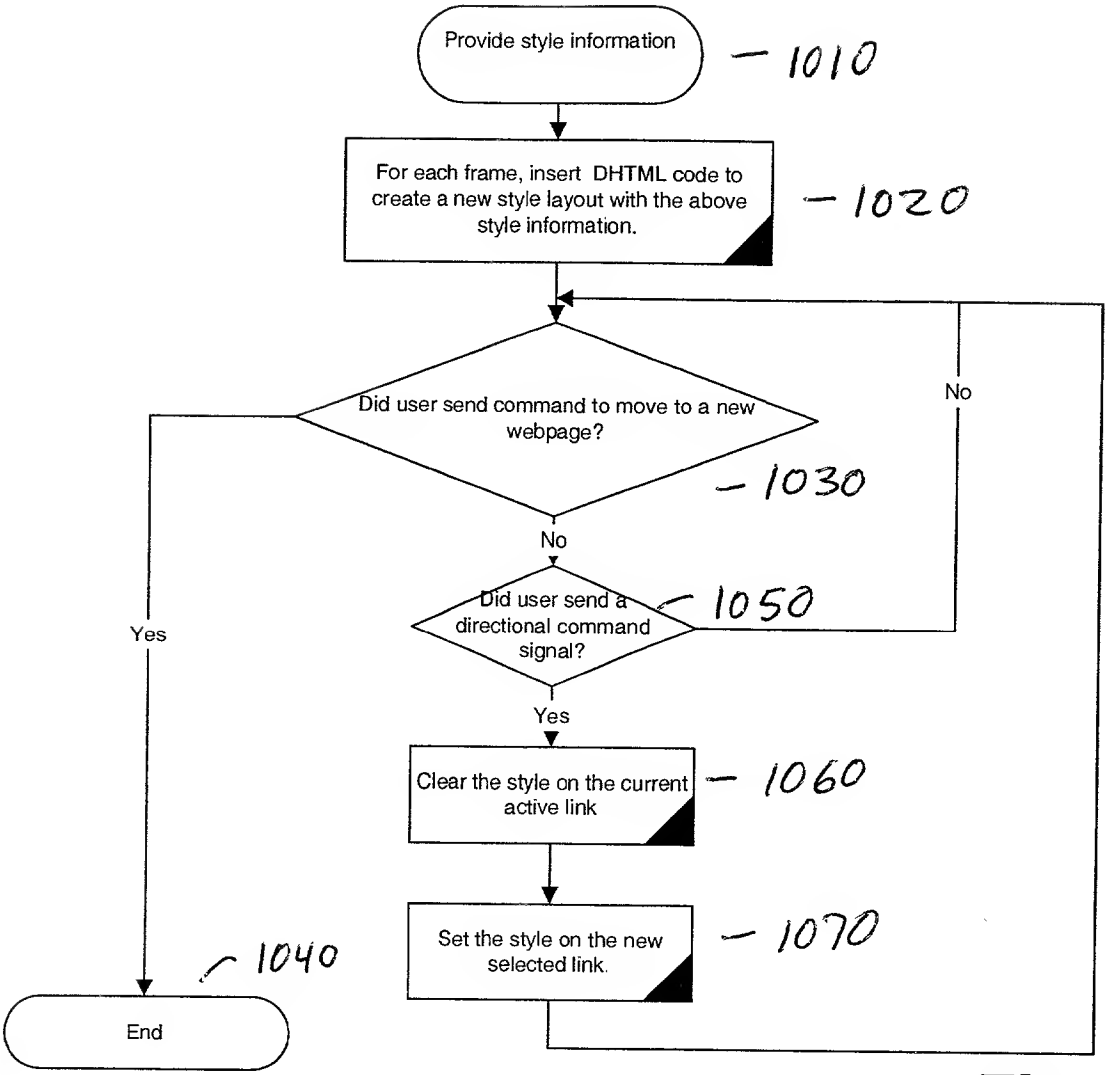

Provide style information
1010
For each frame, insert DHTML code to create a new style layout with the above style information.
1020
Did user send command to move to a new webpage?
1030
No
Yes
Did user send a directional command signal?
1050
No
Yes
Clear the style on the current active link
1060
Set the style on the new selected link.
1070
End
1040

Fig. 10

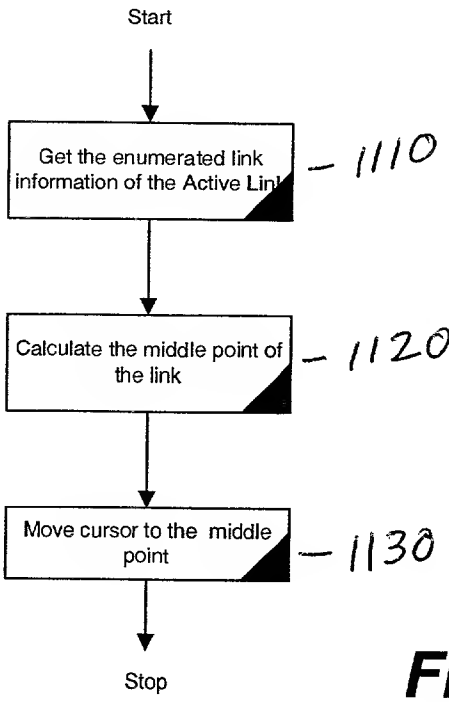

Start
Get the enumerated link information of the Active Link
1110
Calculate the middle point of the link
1120
Move cursor to the middle point
1130
Stop

Fig. 11